REMARKS

Claims 1-5 were pending in the application. Claims 1-5 stand rejected. Claim 1 was cancelled. Claims 2-5 were amended. Claims 6-21 were added. Claims 2-21 remain in the application.

The specification was objected to. Informalities on page 1, line 15; page 6, line 24; and page 10, line 24 were corrected as suggested. The remaining informalities were corrected by amendment of Claim 1.

Claims 1 and 3-5 stand rejected under 35 U.S.C. 102(e) as being anticipated by Loushin et al. (6,462,835). The rejection states:

> "Regarding claim 1: Loushin et al. disclose determining a maximum dark value (darkest usable portion, col. 5, ln. 12-15) for the image capture system (Fig. 1, system 10) representing the response of the system to no light exposure (col. 5, ln. 12-15); generating an image processing path (see Fig. 1 from scanner 12 to software-based system 14) for processing the image prior to display on an output device (intended display device, col. 9, ln. 63 through col. 10, ln. 3), the image processing path (see Fig. 1) having one or more image dependent image transforms (Fig. 1, parameterized calibration curves, RGB histograms, and RGB LUTs), that upon processing the maximum dark value (darkest usable portion, col. 5, ln. 12-15) produces a processed maximum dark value (Fig. 1, reconstructed image) that meets a predetermined criteria (data contained in LUTs) for darkness such that the "smokey black" problem is minimized (ensuring mostly black areas are represented in that manner, note example of campfire at night, col. 11, ln. 43-65); and applying the image processing path (see Fig. 1) to the photographic image (Fig. 1, image data) to produce a processed photographic image (Fig. 1, reconstructed image)."
>
> "Regarding claim 3: Loushin et al. satisfy all the elements of claim 1. Loushin et al. further disclose using an identification code (film type identifier code, col. 7, ln. 37-59) associated with the film that points to a Dmin value (under-exposure of a scanned image, col. 5, ln. 42-48) stored in a data base (Fig. 1, exposure curve generation module 16).

"Regarding claim 4: Loushin et al. satisfy all the elements of claim 1. Loushin et al. further disclose providing a plurality of different processing paths (Figs. 5 and 6); propagating the maximum dark value (darkest usable portion, col. 5, ln. 12-15) through different processing paths (Figs. 5 and 6); choosing the processing path (Figs. 5 and 6) that produces the most desirable processed maximum dark value (read from memory or input by the user, col. 12, ln. 64-67 through col. 13, ln. 1).

"Regarding claim 5: Loushin et al. satisfies all the elements of claim 1. Loushin et al. further disclose providing a base image processing path (see Fig. 1); propagating the maximum dark value (darkest usable portion, col. 5, ln. 12-15) through the base image processing path (see Fig. 1); modifying one or more image transforms (Fig. 1, parameterized calibration curves, RGB histograms, and RGB LUTs) the base image processing path (see Fig. 1) based on the propagated maximum dark value (darkest usable portion, col. 5, ln. 12-15) to produce the generated image processing path (see Fig. 1)."

Claim 1 was cancelled. Claims 3 and 5 were amended to depend from Claim 4 which was rewritten as an independent claim, and now states:

4. A method for processing a photographic image captured by an image capture system, comprising the steps of:

a) determining a maximum dark value for the image capture system representing the response of the system to no light exposure;

b) generating an image processing path for processing the image prior to display on an output device, the image processing path having one or more image dependent image transforms, that upon processing the maximum dark value produces a processed maximum dark value that meets a predetermined criteria for darkness such that the "smokey black" problem is minimized; and

c) applying the image processing path to the photographic image to produce a processed photographic image;

wherein the step of generating an image processing path includes the steps of:

a) providing a plurality of different processing paths;

b) propagating the maximum dark value through the different processing paths; and

c) choosing the processing path that produces the most desirable processed maximum dark value.

Claim 4 requires providing a plurality of different processing paths, propagating the maximum dark value through the different processing paths, and choosing the processing path that produces the most desirable processed maximum dark value. The rejection indicates that Figures 5 and 6 of Loushin et al. are different processing paths. Loushin et al. does not support the rejection. There is no choosing of a processing path, when one path feeds into the other. In Loushin et al., the results of the method of Figure 5 (a "scan calibration method"--Loushin et al., col. 11, lines 66-67) are used in the method of Figure 6 (a "scan correction and reconstruction method"--Loushin et al., col. 11, lines 43-44):

"Using the calibration file generated as described with reference to FIG. 5, the image is corrected for over-exposure or under-exposure, as indicated by block 66." (Loushin et al., col. 12, lines 53-55; also see Figure 6; col. 12, lines 34-38; and generally see col. 11, line 66 to col. 13, line 10)

Similarly, "the most desirable processed maximum dark value (read from memory or input by the user, col. 12, ln. 64-67 through col. 13, ln. 1)" is a result of the methods of Figures 5 and 6.

Claims 3 and 5 are allowable as depending from Claim 4. Claim 5 requires that the different processing paths that can be chosen include a base image processing path and modifications of that base path. There are no such choices in Loushin et al. (See Figure 1)

Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Loushin et al. in view of Zinchuk (4,151,560). Claim 2 is allowable as depending from Claim 4.

Claims 6-21 were added.

Claim 6 is allowable as depending from Claim 4 and as follows. Claim 6 states:

6. The method claimed in claim 4 wherein said image has a plurality of color channels and said propagating the maximum dark value through the different processing paths further comprises determining a

maximum dark value component as to each of said channels and setting the highest of said maximum dark value components as the maximum dark value of the respective said image processing path.

Claim 6 is supported by the application as filed, notably the original claims and at page 9, lines 1-9. Claim 6 requires determining a maximum dark value component as to each channel and setting the highest of the maximum dark value components as the maximum dark value of the respective path. Loushin et al. describes averaging RGB values of the underexposed calibration image in the calibration step of Figure 5. (Loushin et al., col. 12, lines 14-19)

Claim 7 states:

7. A method for processing a photographic image captured by an image capture system, comprising the steps of:

determining a maximum dark value for the image capture system representing the response of the system to no light exposure;

generating a plurality of black level metrics using said maximum dark value, each said black level metric being associated with a respective one of a plurality of different image processing paths;

selecting one of said plurality of different image processing paths based on said black level metrics, to provide a selected image processing path, said selected image processing path having one or more image dependent transforms, said selected image processing path having a respective said black level metric that meets a predetermined criteria; and

applying the image processing path to the photographic image to produce a processed photographic image.

Claim 7 is supported and allowable on grounds discussed above in relation to Claim 4. Loushin et al., in Figures 5 and 6, does not teach different processing paths.

Claims 8-12 are allowable as depending from Claim 7 and as follows.

Claim 8 states:

8. The method of claim 7 wherein said generating further comprises:

subsampling said image to provide a low resolution copy; and

propagating said copy along each of said image processing paths.

Claim 8 is supported by the application as filed, notably the original claims and at page 12, lines 26-31. Claim 8, unlike Loushin et al., requires propagation of a low resolution copy along each of a plurality of image processing paths. Loushin et al., as earlier discussed, lacks such a plurality of paths.

Claim 9 states:

9. The method of claim 7 wherein said determining step is based on metadata associated with said image.

Claim 9 is supported by the application as filed, notably the original claims and at page 9, line 30 to page 10, line 6.

Claim 10 states:

10. The method of claim 7 wherein said generating further comprises:

providing said plurality of different image processing paths;

propagating the maximum dark value through the different processing paths; and

choosing the processing path that produces the most desirable processed maximum dark value.

Claim 10 is supported by the application as filed, notably the original claims. Claim 10 is allowable on the grounds discussed above in relation to Claim 4.

Claim 11 states:

11. The method claimed in claim 10 wherein said image has a plurality of color channels and said propagating the maximum dark value through the different processing paths further comprises determining a maximum dark value component as to each of said channels and setting the highest of said maximum dark value components as the maximum dark value of the respective said image processing path.

Claim 11 is supported and allowable in the same manner as Claim 6.

Claim 12 states:

12. The method of claim 7 wherein said generating and selecting further comprise:

providing a base image processing path;

propagating the maximum dark value through the base image processing path; and

modifying one or more image transforms of the base image processing path based on the propagated maximum dark value to produce the other image processing paths.

Claim 12 is supported by the application as filed, notably the original claims and at page 14, lines 9-27. Claim 12 requires modification of the base image processing path to produce other image processing paths. Loushin et al. lacks other image processing paths.

Claim 13 states:

13. A method for processing a photographic image captured by an image capture system, comprising the steps of:

determining a maximum dark value for the image capture system representing the response of the system to no light exposure using metadata associated with said image;

generating a plurality of black level metrics using said metadata, each said black level metric being associated with a respective one of a plurality of different image processing paths;

selecting one of a plurality of different image processing paths to provide a selected image processing path, said selected image processing path having one or more image dependent transforms, said selected image processing path having a respective said black level metric that meets a predetermined criteria; and

applying the image processing path to the photographic image to produce a processed photographic image.

Claim 13 is supported by the application as filed, notably the original claims and at page 9, line 28 to page 10, line 6-29. Claim 13 is allowable on the grounds discussed above in relation to Claims 4 and 7.

Claims 14-19 are allowable as depending from Claim 13 and as follows.

Claim 14 states:

14. The method of claim 13 wherein said generating is independent of content of said image.

Claim 14 is supported by the application as filed, notably the original claims and at page 10, lines 3-6. Loushin et al., in contrast, states:

> "Histogram generation module 18 processes image data generated by scanner 12 in response to actual user-provided images, and produces a histogram representing the distribution of the gray levels for the red, green, and blue (RGB) channels within the image. Color correction/image reconstruction module 20 processes the histogram generated by histogram generation module 18 and calibration curves generated by exposure curve generation module 16 to produce correction LUTs for each of the red, green, and blue color separations." (Loushin et al., col. 3, lines 48-57)

Claim 15 states:

> 15. The method of claim 13 wherein said generating further comprises:
>
> subsampling said image to provide a low resolution copy; and
>
> propagating said copy along each of said image processing paths.

Claim 15 is supported and allowable in the same manner as Claim 8.

Claim 16 states:

> 16. The method of claim 13 wherein said determining step is based on metadata associated with said image.

Claim 16 is supported in the same manner as Claim 9.

Claim 17 states:

> 17. The method of claim 13 wherein said generating further comprises:
>
> providing said plurality of different image processing paths;
>
> propagating the maximum dark value through the different processing paths; and
>
> choosing the processing path that produces the most desirable processed maximum dark value.

Claim 17 is supported and allowable in the same manner as Claim 10.

Claim 18 states:

> 18. The method claimed in claim 13 wherein said image has a plurality of color channels and said propagating the maximum dark

value through the different processing paths further comprises determining a maximum dark value component as to each of said channels and setting the highest of said maximum dark value components as the maximum dark value of the respective said image processing path.

Claim 18 is supported and allowable in the same manner as Claim 11.

Claim 19 states:

19. The method of claim 13 wherein said generating and selecting further comprise:

providing a base image processing path;

propagating the maximum dark value through the base image processing path; and

modifying one or more image transforms of the base image processing path based on the propagated maximum dark value to produce the other image processing paths.

Claim 19 is supported and allowable in the same manner as Claim 12.

Claim 20 states:

20. A system for processing a photographic image captured by an image capture system, comprising the steps of:

means for determining a maximum dark value for the image capture system representing the response of the system to no light exposure;

means for generating a plurality of black level metrics using said maximum dark value, each said black level metric being associated with a respective one of a plurality of different image processing paths;

means for selecting one of a plurality of different image processing paths based on said black level metrics, to provide a selected image processing path, said selected image processing path having one or more image dependent transforms, that upon processing the maximum dark value produces a processed maximum dark value that meets a predetermined criteria for darkness such that the "smoky dark" problem is minimized; and

means for applying the image processing path to the photographic image to produce a processed photographic image.

Claim 20 is supported and allowable in the same manner as Claim 4.

Claim 21 states:

21. The system of claim 7 wherein said means for generating and means for selecting further comprise:

means for providing a base image processing path;

means for propagating the maximum dark value through the base image processing path; and

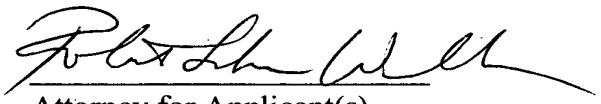
means for modifying one or more image transforms of the base image processing path based on the propagated maximum dark value to produce the other image processing paths.

Claim 21 is supported and allowable in the same manner as Claim 12.

It is believed that these changes now make the claims clear and definite and, if there are any problems with these changes, Applicants' attorney would appreciate a telephone call.

In view of the foregoing, it is believed none of the references, taken singly or in combination, disclose the claimed invention. Accordingly, this application is believed to be in condition for allowance, the notice of which is respectfully requested.

Respectfully submitted,



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